

REMARKS

In accordance with the foregoing, claims 12, 23 and 34 are amended. No new matter is presented and, accordingly, approval and entry of the foregoing amended claims are respectfully requested.

Claims 8, 12, 13, 15-17, 19-28 and 30-42 are pending and under consideration.

The rejections are traversed.

ENTRY OF AMENDMENT UNDER 37 C.F.R. §1.116

Applicant(s) request entry of this Rule 116 Response because it is believed that the amendment of claims puts this application into condition for allowance, and the amendments of claims 12, 23, and 34 should not entail any further search by the Examiner since no new features are being added or no new issues are being raised.

CLAIM AMENDMENTS

Independent claims 12, 23, and 34 are amended to respectively recite an apparatus for collecting a profile of a subroutine included in a program, a computer readable medium storing a program for a computer executing a process for collecting a profile of a subroutine included in a target program, and a method for collecting a profile of a subroutine included in a program, using claim 12 as an example that "when the identified branch instruction is neither a calling instruction nor a return instruction, said interrupt is terminated." (See, for example, FIG. 4).

ITEM 2: REJECTION OF CLAIMS 8-17, 19-28, AND 30-42 UNDER 35 U.S.C. §103(a) UNDER ALEXANDER, III ET AL. (U.S.P. 6,002,872) IN VIEW OF SMOLDERS (U.S.P. 6,253,338)

The Examiner rejects independent claims 12, 23, and 34 (and respective dependent claims 8-11, 13-17, and 40, claims 24-28, 30-33, and 41, and claims 35-39 and 42) under 35 U.S.C. §103(a) as obvious under Alexander in view of Smolders. (Action at pages 4-12).

Independent claims 12, 23, and 34, all as amended, respectively recite an apparatus for collecting a profile of a subroutine included in a program, a computer readable medium storing a program for a computer executing a process for collecting a profile of a subroutine included in a target program, and a method for collecting a profile of a subroutine included in a program, using claim 12 as an example "identifying a type of said branch instruction by obtaining a instruction code from said branch source address and decoding said instruction code; and . . . and when the identified branch instruction is neither a calling instruction nor a return instruction, said interrupt is terminated."

Applicants submit that features are "identifying a type of said branch instruction . . . and

when the identified branch instruction is neither a calling instruction nor a return instruction, said interrupt is terminated” is not discussed by the cited art, alone or in combination.

Alexander, III et al. discusses identifying a periodically occurring event and obtaining a call stack associated with an active thread at a time of the event. (See, for example, col. 2, starting at line 42).

Smolders discusses counting various events from a running program by taking a trace by way of using an interruption. (See, for example, col. 2 starting at line 5).

Alexander in view of Smolders discusses identifying a periodically occurring event and checking if an instruction is a branch instruction.

The Action concedes that Alexander does not discuss that “wherein the interrupt is generated by execution of a branch instruction” and does not discuss “identifying a type of said branch instruction by obtaining an instruction code from said branch source address and decoding said instruction code.”

Smolders does not discuss identifying a type of branch instruction but merely that a branch instruction exists (col. 4, lines 21-22), let alone terminating an interrupt when an identified branch instruction is neither a calling instruction or a return instruction.

In items 3 entitled Response to Arguments that Examiner contends that

Smolders determines the address of the next basic block of code to return to after the branch instruction is executed. To determine this address, Smolders must identify whether the branch is taken or not taken, which is to say that Smolders. must distinguish between conditional branches and other types of unconditional branches, which is to say that Smolders must identify the type of branch. Without such identification, the address of the next basic block of code cannot be determined, and the interrupt handler, as disclosed, would become inoperative.

(Action at page 2).

Applicants further submit that in addition to Smolders not discussing terminating an interrupt when an identified branch instruction is not a calling or return instruction, the Examiner’s contention regarding Smolder is incorrect. Smolder discusses (col. 4, lines 30-35) that a “counter level tracing tool 31 saves the address of the beginning of the next basic block of code, which is the address where the interruption came from as shown in step 34” (emphasis added), and not “so as to provide a return address,” as the Examiner contends.

Applicants further submit there is no motivation or reasonable chance of success to combine the art in a manner as suggested by the Examiner. In item 5, entitled Response to Arguments, the Examiner contends:

Smolders discloses a system for collecting a trace of a program . . . , generating

interrupts after every branch instruction . . . and further discloses that tracing by way of such interrupts is performed "without introducing any overhead or modifying the code" (see column 1, lines 64-67). . . . One of ordinary skill in the art would have been motivated to enable tracing without introducing any overhead and without modifying the code, as taught by Smolders. Therefore, would have been obvious to . . . substitute the timer interrupt of Alexander with the branch interrupt of Smolders, as suggested by Alexander, so as to preclude any overhead and modifications to the code.

Applicants respectfully submit that the Examiner's contention is incorrect in that Smolders discusses, rather, (col. 3, lines 65-67) a system "for tracing hardware counters by way of an interruption without introducing any overhead or modifying the code." (Emphasis added). That is, Smolders does not discuss a possible substitution of interrupts as the Examiner contends.

Conclusion

Since the features recited by independent claims 12, 23, and 34 (and respective dependent claims 8-11, 13-17, and 40, claims 24-28, 30-33, and 41, and claims 35-39 and 42) are not discussed by the cited art, alone or in combination, and there is no motivation to combine the art, *prima facie* obviousness is not established, and the rejection should be withdrawn and claims 8, 12, 13, 15-17, 19-28 and 30-42 allowed.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is invited to telephone the undersigned to attend to these matters.

Please charge any fees associated with filing this Amendment to our Deposit Account No. 19-3935.

Respectfully submitted,

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